Annual Report Highlights for 2011

Inside this Issue

Overview

In 1987, Congress established the Nonpoint Source (NPS) Pollution Management Program under Section 319 of the Clean Water Act (CWA). This program provides states with technical assistance and grant funding, through EPA, to implement NPS pollution controls to achieve goals that protect, improve and restore water quality as described in the State's NPS pollution management program plans. Annual NPS Reports are submitted from the states in response to Section 319(h)(8) and (11) of the CWA (33 USC1329.

This limestone pond treats AMD in the Miller Run watershed.

Partners added limestone rock to roadside ditches on the State Game Lands #67 access road to provide passive treatment for runoff in the Miller Run watershed.

Pennsylvania Partnerships lead the Region and Nation in Waterbodies Restored.

Through the combined work of all the Nonpoint Source (NPS) program partners working on Abandoned Mine Drainage in Pennsylvania, the Commonwealth was able to restore 17 stream reaches, bringing these impaired streams back into meeting their aquatic life designated use. The major agencies and groups involved in partnering with the Pa Department of Environmental Protection to reach this goal include: county conservation districts, local watershed associations, various coalitions for abandoned mine reclamation, EPA, Office of Surface Mining, the Pa Association Of Conservation Districts, local municipalities, various Universities, volunteer monitoring groups, and PennVest (operating Pennsylvania's State Revolving Fund program). Through the integration of the technical, administrative and financial resources of all these significant program partners, Pennsylvania was able to make major improvements in the water quality.

Restoring Lakes and Streams

States in Region 3 documented water quality restoration on 18 water bodies during the Year. This brings the Region's cumulative total to 49 waterbodies restored, which contribute to the national total of 358. By restoring seventeen stream/ lake segments this past year, Pennsylvania also leads other States in the Region with a cumulative total of 35 water bodies restored.

All Pennsylvania Success Stories along with other States Success Stories are located @ http://water.epa.gov/polwaste/nps/success319/ Projects described on this site have received funding from Clean Water Act (CWA) section 319 and/or other funding sources dedicated to solving nonpoint source (NPS) impairments.

Water quality improvements are demonstrated through the achievement of water quality standards for one or more pollutants/uses (i.e., removal from the state's CWA section 303(d) list of impaired waters); measured in-stream reduction in a pollutant; or measured improvement in a parameter that indicates stream health such as increases in fish or macroinvertebrate counts. These stories also describe innovative strategies used to reduce NPS pollution, the growth of partnerships and a diversity of funding.

Annual Report Highlights for 2011

Virginia leads the Region in preventing the largest amount of Nitrogen from entering rivers and streams.

	Pollutant type	
	Nitrogen	Phosphorus
Region	LBS/YR	LBS/YR
1	49,001	30,880
2	73,351	92,284
3	4,017,364	315,031
4	851,036	240,589
5	239,329	173,864
6	5,196,100	2,902,240
7	1,294,683	705,981
8	516,270	174,013
9	305,317	66,284
10	280,015	101,694
Total	12,822,466	4,802,860

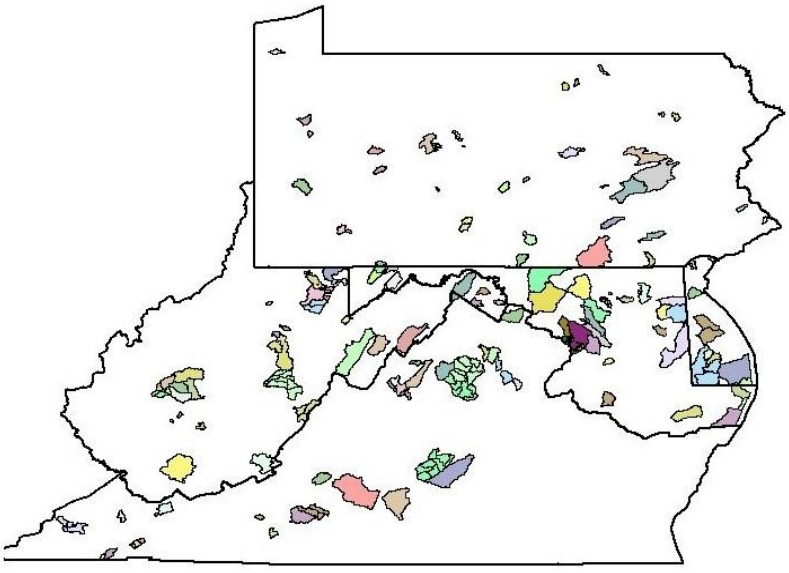
More than 2.5 million pounds of nitrogen and more than 261,000 pounds of phosphorus were prevented from reaching Virginia streams and lakes in 2011. This was the highest concentration among Region 3 states and the second highest Nitrogen reduction in the nation. This was achieved largely by the Virginia Soil and Water Conservation Districts working closely with farmers, the Virginia Department of Conservation and Recreation's efforts to recruit and train private nutrient management planners that resulted in nutrient management plans for 340,806 acres and local Total Maximum Daily Load (TMDL) implementation.

TMDL Implementation Projects included installations of best management practices for agriculture, residential septic and urban areas. These projects were coordinated through the districts, which are charged by state law to protect and enhance Virginia's soil and water resources.

Additional cost-sharing from the state and through the EPA NPS program grant enabled the districts to continue working to reduce non-point source pollution. The ability of districts to work in partnership with local, state and federal agencies increases their effectiveness at solving local environmental problems.

Watershed Plan management takes hold in Region 3

The National NPS Program began requiring the development and implementation of Watershed Based Plans in 2002. Since then, States in Region 3 have developed 86 plans that cover over 200 watersheds. These plans when fully implemented will restore over 2600 impaired stream reaches.



Overview

The Delaware Nonpoint Source Program administers a competitive grant made possible through Section 319 of the Clean Water Act. The grant provides funding for projects designed to reduce nonpoint source (NPS) pollution in Delaware. NPS pollution may be defined as any pollution that originates from a diffuse source (such as an open field or a road) and is transported to surface or ground waters through leaching or run-off. Reduction of NPS pollution may often be achieved through incorporation of specific best management practices (BMPs) into project work plans.

Projects may target any source of NPS pollution, but most frequently involve agriculture, silviculture, construction, marinas, septic systems, and hydromodification activities.

DELAWARE

Delaware Nonpoint Source Program

Deleware Rain Barrel Program

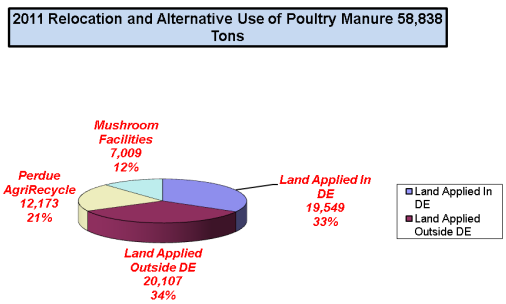
The Nonpoint Source Program has implemented a very successful statewide rain barrel program. Since the inception of the program in 2008, approximately 1,800 barrels have been distributed statewide. The program was unique in that the barrels retailed for $120 but were purchased at a bulk discount price of $66.00 and sold to residents for the same price. The program did not cost the state any money and provided water quality and conservation benefits while providing a substantial savings to Delaware residents.

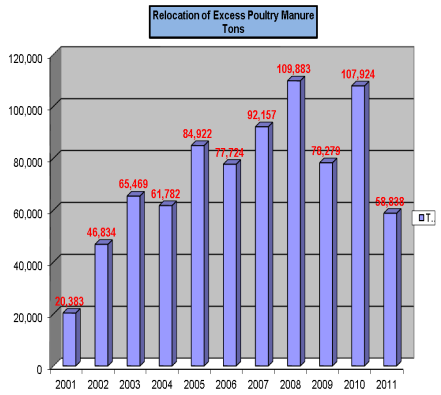
In 2011, the NPS program implemented its fourth annual statewide rain barrel distribution. One hundred barrels were earmarked for each of the three counties and the distribution was scheduled from 10 a.m.-7 p.m. The program was so successful that all 300 barrels were sold out in just one hour. A fifth rain barrel distribution is scheduled for May 2012.

Nutrient Relocation Program

In 2011 the Nutrient Relocation Program relocated 58,838 tons of poultry manure which accounted for the transportation of 3.6 million pounds of total nitrogen and 2.6 million pounds of phosphorus as phosphate out of Delaware's priority watersheds. If that tonnage had been applied to the source farm rather than relocated, significant nitrogen and phosphorus could have potentially entered Delaware's surface waters.

Project	Nitrogen (lb)	Phosphorus (lb)	Sediment (ton)
Conservation Reserve Enhancement Program	4003	1320	1103
Kent Conservation District Planners	232,816	1,486	NA
Nutrient Management Relocation	48,310	5,128	NA
Sussex Conservation District Planners	4,855,217	7,179	NA
Total	**5,140,346**	**15,113**	**1103**





DELAWARE NPS NONPOINT SOURCE PROGRAM

Overview

The mission of the District of Columbia's (DC) Non-point Source program is to prevent and control non-point source pollution in the District's watersheds. Employing both regulatory and non-regulatory approaches, the Program works to safeguard the city's water and soil resources as well as the health and welfare of citizens using those resources.

DISTRICT OF COLUMBIA

Pollution Prevention

RiverSmart Homes is an incentive-based program that encourages homeowners to install low-cost residential Best Management Practices and institute green landscape management practices that help improve local water quality. The program has installed 428 rain barrels, planted 729 shade trees, installed 66 rain gardens, implemented BayScaping at 142 properties, replaced impervious surfaces with green space or pervious pavers at 28 properties and conducted 1,176 audits.

Tree Planting: Planted 1 acre of new trees as part of the Oxon Run Trail Rehabilitation Project, planted 729 trees as part of the RiverSmart Homes Program and planted native trees at the bank of a steep slope at Stokes Elementary (RiverSmart School)

WPD Storm Drain Marker Program: The Watershed Protection Division installed 975 storm drain makers throughout the District of Columbia with private citizens, individuals from various volunteer groups and DCPS school groups.

Trash Removal: Removal of over 6 tons of trash from stream banks of Oxon Run on DDOE All Hands Cleanup Day and removal of 2 to 3 tons of trash on MLK Jr. Clean-Up Service Day with DC Sierra Club, UFA-DDOT, DPW, ANC 7A, Penn Branch Civic Association .

Education, Protection and Restoration

Watts Branch Restoration

The District, the U.S Wildlife Service and the USDA Natural Resources Conservation Service completed a restoration project for the Watts Branch tributary of the Anacostia River in Washington, DC from Southern Avenue to Minnesota Ave. NE. A series of in-stream structures were installed (cross vanes, j-hooks, and vane arms) to keep the high velocity flows in the center of the stream channel thus minimizing erosive forces on the stream banks over a 1.7 mile stretch of stream on District property. This project will help reduce total suspended solids (TSS) in Watts Branch by 51,000lbs/yr, nitrogen (N) by 400lbs/yr, and phosphorous (P) by 70lbs/yr.

Installation of a covered classroom and a 1,300 gallon cistern enhance the schoolyard conservation site at Walker Jones Education Campus

The DDOE, Watershed Protection Division, Planning and Restoration Branch staff oversaw and contracted the construction of a 45' x 12' covered classroom and a 1,300 gallon cistern installation at the Walker Jones Education Campus, one of the five selected schools in the RiverSmart Schools program.

Students take part in a wetland planting at Hardy Middle School

Awarded Hardy Middle School a RiverSmart Schools grant to build a new wetland area, butterfly garden and vegetable garden on a marshy patch of grass next to the impervious tennis courts and provided students in 6th and 7th grades with lessons about their local environment and watershed and engaged students in wetland planting activities.

Overview

Maryland Department of the Environment plays a lead role in helping to achieve protection and improvement of Maryland's water quality by promoting and funding state and local water quality monitoring, stream and wetland restoration, education and outreach, and other measures to reduce and track nonpoint source pollution loads.

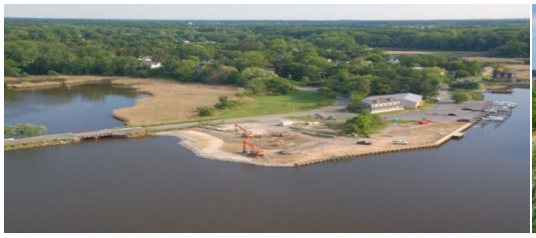
Accomplishments

Corsica River

The nonpoint source annual TMDL load allocation for nitrogen is 268,211lbs and for phosphorus is 19,380 lbs. Corsica River watershed ambient NPS nutrient loads already met the TMDL when it was approved by EPA, so the TMDL serves as a benchmark to prevent degradation.

2011 Accomplishments:

- Planted 4808 acres of the annual cover crop goal .
- Installed 6.1 Acres of Stormwater Retrofits towards a cumulative goal of 37%.
- 275 linear feet of living shoreline was completed on the Corsica River as part of a larger project called the Wharf Area. The living shoreline is protected by breakwaters to limit erosion. The 319(h) Grant funded project management. All other costs were funded by the Maryland Waterway Improvement Program, the Maryland Chesapeake Bay Trust and NOAA .



The living shoreline is being constructed on the shoreline perpendicular to the roadway in Centreville's Wharf Area during May 2011. (left) Wharf-living-shoreline-2011August: Newly completed living shoreline with breakwatersshortly after construction in August 2011. (right) Photos by Eva Kerchner, Watershed Coordinator, Town of Centreville

Lower Monocacy River

The Lower Monocacy River watershed encompasses 194,700 acres (304 mi2) that drains portions of Frederick County (87%), Montgomery County (10%) and Carroll County (3%). The Lower Monocacy River Watershed Restoration Action Plan was developed by Frederick County in 2004 and in 2008, the County used local funds to revise the Plan to meet the EPA program guidelines.

For 2011, Frederick County reported that urban BMPs implementation resulted in estimated pollutant reduction totaling over 532 pounds nitrogen, 46 pounds phosphorus and 4.6 tons sediment.

Aaron Run

Aaron Run is a tributary to the Savage River, which drains to the Potomac River and then to the Chesapeake Bay. The watershed area is about 3.5 square miles entirely within Garrett County, Md. One legacy of past coal mining in this watershed is continuing acid mine drainage (AMD). The intent of the 319(h) Grant-funded projects was to mitigate AMD in the Aaron Run mainstem to allow for re-establishment of native brook trout populations and recovery of fish populations.

Beginning in October 2005, 319(h) Grant funds helped to pay for an assessment of acid mine drainage sources in the Aaron Run watershed, selection of mitigation sites and technologies, project designs and implementation of the projects.

Location	BMP	Acid			Iron			Aluminum		
		Lbs/Day	Lbs/Yr	Tons/ Yr	Lbs/Day	Lbs/Yr	Tons/Yr	Lbs/Day	Lbs/Yr	Tons/Yr
Owens North	Alkaline Leach Bed	42.4	15,478.4	7.7	8.4	3,052.7	1.5	3.0	1,113.6	0.6
Owens South	SAPS Cell	173.2	63,219.0	31.6	26.3	9,616.0	4.8	11.1	4,067.9	2.0
Stream Restoration	Doser	73.0	26,630.9	13.3	4.6	1,695.6	0.9	6.6	62,435.2	1.2
	SAPS Cell	49.5	18,080.7	9.0	1.6	566.1	0.3	5.1	1,852.7	0.9
TOTAL		338.1	123,409.0	61.6	40.9	14,930.4	7.5	25.8	9,469.4	4.7

Pa NPS Program

PENNSYLVANIA

Pennsylvania continues its efforts to implement their *NPS Management Program Plan-2008 Update* which outlines current efforts that the Commonwealth can take to address Nonpoint Source (NPS) pollution of surface water bodies. Pennsylvania has been very successful in its efforts to pull various partnering agencies and organizations together to work towards the goal of improving Non-point Source (NPS) impaired streams and lakes through-out Pennsylvania. Pa has been able to restore over 100 miles of NPS impaired streams as well as over 1,800 acres of NPS impaired lakes.

Stream and Lake Assessments

According to the draft 2012 Pennsylvania Integrated Water Quality Monitoring and Assessment Report, approximately 84,325 miles of streams and rivers within the state have been assessed for the aquatic life designated use. Approximately 19% of these assessed stream and river miles have been determined to be impaired for aquatic life uses, equaling about 16,353 miles.

Approximately 80,525 acres of Commonwealth lakes have been assessed for the aquatic life designated use. About 46% or 37,331 lake acres assessed are impaired**.** About 54% or 43,194 acres of lake acres assessed are supporting the aquatic life designated use. Abandoned mine drainage (AMD) and agricultural runoff continue to be the primary sources of NPS impairments in PA waters.

Load Reductions From 319 Federally Funded Projects Completed in 2011

Nutrient and Sediment Pollutant Load Reduction Estimates

Nitrogen (lbs/year)	Phosphorus (lbs/year)	Sediment (tons/year)
27,254	6,041	3,137

Abandoned Mine Drainage Pollutant Load Reduction Estimates

Iron	Aluminum	Manganese	Acidity
78,840	14,600	1,825	117,895

Improving Waters

Hubler Run

This stream was categorized as impaired for pH and metals caused by Abandoned Mine Drainage (AMD). In 2007, a TMDL was completed for the Alder Run watershed, including Hubler Run. Construction for a new system to complete restoration begins this spring.

Prior to treatment systems construction, the pH of Hubler Run ranged from 4.1 to 5. Recent monitoring results show significant improvements due to the treatment systems. In 2009 and 2010, the average level of aluminum was 0.08 mg/l, iron was 0.12 mg/l and manganese 0.95 mg/l, and pH was 7.1.

Sixmile Run

Sixmile Run is listed as impaired for pH and metals caused by AMD. In 2004, a TMDL was completed in 1996 for pH only to address the 1996 listings for both pH and metals.

Water quality improvements have been documented since two passive treatment systems were built by Broadtop Township in 2008 and 2009 on Sixmile Run and one of its unnamed tributaries (UNT). These projects together include two limestone ponds, two settling ponds, a vertical flow wetland and an aerobic wetland.

Mill Creek

The Mill Creek Stream Restoration Phase I project was completed by USFWS and local contractors in late summer 2010.

Annual sediment load reductions for Phase I are estimated at 1,262 tons/year. With the completion of Phase I, over a 1-mile continuous stretch of the Mill Creek main stem has been restored. Phase II of the project is included in PA's FFY2010 Section 319 NPS Program grant.

Settling ponds for AMD treatment System in the Hubler Run watershed

AMD treatment system in the Sixmile Run watershed

Before and after pictures of BMPs installed along an ag impacted stretch of Mill Creek in Lancaster County

Overview

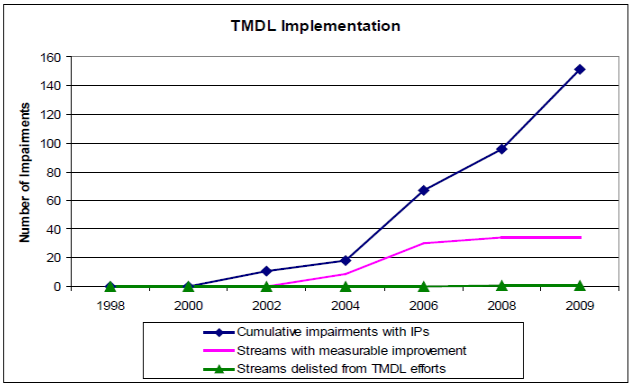
Virginia's goal is that all rivers, lakes, streams and tidal waters attain the appropriate beneficial uses. These beneficial uses are described by the following use goals: drinking water, primary contact/swimming, fishing, shellfishing, and aquatic life. These uses are protected by application of the state's numeric and narrative water quality criteria. When the beneficial uses are not being met these waters are considered "impaired" and the state must take steps to meet water quality standards to ensure that water quality is restored. One very important step in restoring water quality in the impaired streams is the development of TMDLs. The goal of the TMDL program is to achieve attainment of water quality standards. The Commonwealth achieves this goal by means of a three -phase process: TMDL development, development of TMDL IPs and/or permit conditions, and implementation of permit conditions and/or best management practices. TMDL reports, implementation plans and implementation progress updates are available on the Department of Environmental Quality's (DEQ) TMDL website at https://www.deq.virginia.gov/TMDLDataSearch'ReportSearch.ispx.

Water Quality Improvements, Watershed Restoration, Delisting and Future Actions

Translating TMDLs developed at an ambitious pace into actual water quality improvements is a growing challenge in the TMDL program. Virginia has been implementing TMDLs, using existing nonpoint source programs and funding sources despite inadequacies in staffing and funding to handle the volume of TMDLs. Existing resources include regulatory permitting programs from DEQ, DCR and DMME that limit discharges to state waters. These programs are utilized when stream impairments are attributed to a permitted facility. For non-permitted activities, Virginia's approach has been to use incentive-based programs such as the Virginia Agricultural Cost Share Program and Section 319 grant funds. Virginia also offers grant funding for the implementation of BMPs and for technical assistance funding in watersheds with approved implementation plans.

Despite the challenges in attaining water quality standards, Virginia's TMDL program has shown that properly applied and maintained best management practices can result in measurable improvements in water quality (Table I-11).
Virginia's natural resource agencies will continue to engage and work with watershed communities to restore their local rivers and streams using existing programs and resources, and exploring innovative ideas and funding strategies for the future.

Figure I-3. Summary of TMDL Implementation versus Measurement of Water Quality Improvement



(Figure excerpted from the "*Chesapeake Bay and Virginia Waters Clean-Up Plan 6 month Progress Report*")

TMDL Implementation Projects

From January 1, 2010 thru June 30, 2011 there were 27 active projects supported by Federal EPA 319(h) funding, state WQIF and state Virginia Natural Resources Commitment Funds (VNRCF) implementing TMDL Implementation Plans. Collectively these projects spent $2,963,203 of cost-share funds implementing 529 agricultural and residential BMPs. This included 11 active 319(h) funded implementation projects which implemented 369 BMPs and 31 agricultural BMPs funded with VNRCF (these were in aforementioned 319 project areas). In addition 129 agricultural BMPs were funded thru WQIF/VNRCF in 15 other implementation project areas. Collectively, this resulted in over 374,397 feet of stream exclusion, and the reduction of 2.72041E+16 colony forming units (CFU) of fecal coliform bacteria, 238,777 pounds of nitrogen, 44,820 pounds of phosphorous, and 43,380 tons of sediment.

Water Quality Improvement Fund and Cooperative Nonpoint Source Pollution Programs

During FY11, the Department of Conservation and Recreation contracted $7.1 million to local Soil and Water Conservation Districts to cost-share the installation of agricultural best management practices. Practices installed on farms during FY11 will result in estimated edge of field reductions of 2.8 million pounds of nitrogen/year, almost 700,000 pounds of phosphorous/year and sediment reductions of 500,000 tons/year. The Department of Conservation and Recreation awarded $2,652,550 in grants to nonpoint source water quality improvement projects in response to the 2010 Virginia Water Quality Improvement Fund (WQIF) Request for Proposals (RFP).

Overview

According to recent survey information of our nation's streams, rivers, wetlands and estuaries, nonpoint source (NPS) pollution is the largest source of water quality problems. Approximately 40% of our waters surveyed do not support their designated uses due to NPS pollution. NPS pollution is impairment associated with precipitation and run-off, and other non-permitted activities. Since it is mostly un-regulated, NPS is the people's pollution.

Many communities and local organizations are working together to improve their environment. Participation is key. Local leaders must understand the importance of sustainable practices, low impact development (LID) and organizing to do our best to restore and protect water ways for the future.

Section 319 of the Clean Water Act (CWA) distributes grant monies to the states to implement NPS programs. This national program, administered by the US Environmental Protection Agency (US EPA), is vitally important and its results have been significant. Section 319 provides monies for base and incremental grant programs.

Base grants provide monies for our staff. These experts are essential for project management and for encouraging participation from local communities and organizations in areas impacted by NPS pollution. Base grant monies also support outreach and education activities, monitoring and many partner agencies that work to address NPS pollution. West Virginia has allocated $8.3 million towards base grants since 2007.

Incremental grants are used for project implementation. The planning and the areas that are targeted are driven by the 303(d) list and TMDL (total maximum daily loads) process. West Virginia has allocated $9.3 million towards incremental grants since 2007.

WEST VIRGINIA

WV Conservation Agency

The WV Conservation Agency (WVCA) remains the primary entity responsible for the implementation of the West Virginia agriculture and construction components of §319 Program and for coordinating and implementing water quality improvement projects. WVCA acquires 319 base funding and ensures a sufficiently high level of base staff competency. WVCA is responsible for the achievement of the goals and objectives of these programs while meeting the milestones in the required timeframe.

WVCA"s Conservation Specialists (CS) support volunteer watershed associations, educate citizens on NPS pollution issues, identify local stakeholders, partners and funding sources, and take the lead for several project teams. WVCA"s Conservation Service Director (CSD) is responsible for the project coordination, for WVCA 319 programs financial management, implementation tracking, and reporting to DEP. Incremental funds are used to install specific projects designed to remedy or decrease contributions to the impairment of the priority watershed in which the projects are installed. The CSD provides daily supervision and programmatic guidance to project managers and 319 staff.

In addition to the statewide support WVCA focuses efforts in the following project areas:

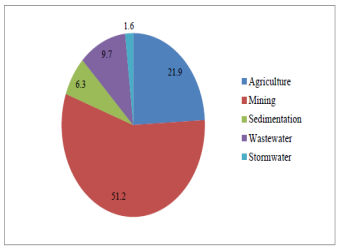
Chesapeake Bay (*Sleepy Creek*, *Lost River*, *James River* and *Mill Creek*)
Kanawha (*Campbell's Creek*)
Greenbrier (*Second Creek*, *Muddy Creek*, *Meadow River*, and *Milligan Creek*/*Davis Springs*)
Lower Ohio (*Fourpole Creek*)

http://www.wvca.us/

West Virginia Save Our Streams:

As of October 2011, the WV Save Our Streams (SOS) Program has a new coordinator. The new coordinator brings 13 years of experience in aquatic ecology and research under the U.S. Geological Survey. With the well-established program the focus thus far has been on outreach and education, networking, and planning. As part on an ongoing duty the volunteer assessment database (VAD) will be upgraded. The NPS program supports and supervises the activities of SOS but the program funded with 106 and water quality management grant funds.

http://www.dep.wv.gov/sos



In West Virginia, the three leading cause of NPS impairments are mining, agriculture and wastewater. These sources contribute acidity, heavy metals, sediment, pathogens and nutrients to our nation's waters, and also dramatically change their overall ecological integrity.

Incremental Grant Progress

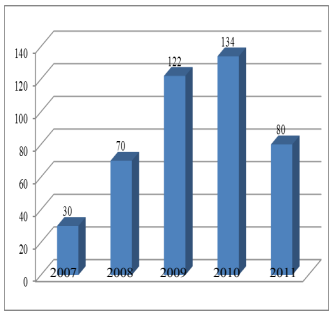
Over the past year the 35 active incremental projects reduced a significant amount of NPS pollutants. Heavy metals from acid mine drainage projects were reduced by **267,764 lbs/yr** (81,366 Aluminum, 165,506 Iron and 16,852 Manganese); acidity was reduced by **661,295 lbs/yr**. From agricultural projects, nutrients were reduced by **46,217 lbs/yr** (38,146 Nitrogen and 8,071 Phosphorous) and sediment was reduced by **1,776 tons/yr**. Pathogens were reduced by **5.31E+15 CFUs** from agricultural and wastewater projects.

A total of **436** (17 different types) of BMPs were installed from 2007-2011

Note: BMPs with units in acres or feet are counted as one BMP, even though their impact is far greater on water quality.

West Virginia's FY 2011 §319 grant totaled **$1,873,120** with **$828,738** (44%) and **$1,044,382** (56%) split between the base and incremental portions.

http://www.dep.wv.gov/nonpoint



BMPs installed on active incremental projects 2007-2011